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600 Area Purgewater Storage and Treatment Facility Closure Plan



United States
Department of Energy

For External Review

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1.0 INTRODUCTION

This document provides a closure plan for the 600 Area Purgewater Storage and Treatment Facility (PSTF). This plan describes the requirements and activities that will be conducted for closure by removal of this *Resource Conservation and Recovery Act of 1976* (RCRA) interim status chemical, physical, and biological treatment unit. All waste residues, protective liners, leachate system components, and structural walls of the PSTF will be removed and either recycled or disposed in accordance with solid and dangerous waste regulations. At closure, the security fencing will be removed, the site graded, and inspections discontinued. There is currently no groundwater monitoring at the PSTF site and because there will be no waste or waste constituents left in place, there will be no post-closure care or monitoring.

2.0 SITE DESCRIPTION

The PSTF consists of two aboveground open containment vessels (ModuTanks™¹) located near the 216-B-3 Pond in the 600 Area at the Hanford Site. The ModuTanks were designed and built to store purgewater from groundwater monitoring activities at the Hanford Site. Groundwater monitoring is required by the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA); the RCRA compliance monitoring program; the Hanford Site monitoring program; and the Operational Groundwater Monitoring Program.

The two ModuTanks are constructed of steel components and have a capacity of approximately 3,790,000 L (1,000,000 gal) each. Each tank has a primary and a secondary liner of 80-mil high-density polyethylene separated by a geotextile drainage layer. A leachate detection system consisting of a standpipe with measurable depth and sampling capability is connected between the two liners. Only one of the ModuTanks installed has been operational. The other unit has never been used and is assumed to be a clean unit.

Purgewater was transferred to the PSTF by tanker truck and gravity-drained into the unit for storage and solar evaporation. The PSTF received approximately 1,137,000 L of purgewater per year that had the potential to be designated D019, F001, or state-only F003 dangerous waste.

3.0 CLOSURE STRATEGY

The closure of the PSTF will be a closure by removal (clean closure) of the unit. All potentially contaminated waste residues, plastic liners, metal sidewalls, leachate collection system components, and loading facility components will be removed and recycled or disposed as described in the following sections. Upon final closure, the site will be "down posted," security

¹ ModuTank is a tradename of ModuTank, Inc., Long Island City, New York.

fences will be removed, and inspections discontinued. The clean closure will be certified upon completion and no post-closure activity will be required.

The PSTF is subject to the requirements of WAC 173-303-400 and 40 CFR 265, Subpart Q as a chemical, physical, and biological treatment unit. As such, 40 CFR 265.404 requires that at closure "all hazardous waste and hazardous waste residues must be removed from treatment processes or equipment." The closure is also subject to the closure performance standards of WAC 173-303-610(2)(a) that requires closure in a manner that achieves the following:

1. Minimizes the need for further maintenance
2. Controls, minimizes, or eliminates post closure escape of dangerous waste, dangerous constituents, leachate, contaminated runoff, or dangerous waste decomposition products to the ground surface water, groundwater, or the atmosphere
3. Returns the land to the appearance and use of surrounding land areas to the degree possible given the nature of the previous dangerous waste activity.

3.1 MODUTANK REMOVAL

The clean ModuTank will be closed first and used as a prototype for closure conditions. Because no wastes were placed in this unit, there are no residues to remove and no decontamination that will be needed for the construction equipment. The liners will be removed and disposed as solid waste either onsite at an inert demolition landfill, or offsite at a municipal landfill. The components of the leachate collection system will be dismantled and either disposed as solid waste or reused. The structural steel sidewalls will be disassembled and either recycled or disposed.

At the start of the removal action, free-standing water remaining in the operational ModuTank will be removed and taken to the Effluent Treatment Facility. After the water has been removed, there may be residual solids remaining in the unit that will undergo waste profile sampling prior to disposal. Purgewater designated D019, F001, and state-only F003 were placed in the unit. Samples of the residues will be analyzed for total concentrations of RCRA toxicity characteristic contaminants. Based on the results of the totals analysis, extract samples may also need to be taken and analyzed for some contaminants. If the residual solids are designated characteristic dangerous waste, they will be treated prior to disposal to meet both the land disposal restrictions for the exceeding contaminant and the Universal Treatment Standards (40 CFR 268.48) for the underlying hazardous constituents. If treatment is necessary, the treatment method utilized is expected to be stabilization. Because the residuals are assumed to contain low-level radioactivity from the purgewater, they will be disposed onsite at the Environmental Restoration Disposal Facility (ERDF).

Prior to removal of any of the ModuTank components, an inspection of the structure will be conducted to identify sites of potential breach of structural integrity where leaks could have occurred. If evidence of leaks is found, limited sampling for hazardous waste constituents will be conducted to determine the extent of chemical contamination. Samples will be analyzed for

the hazardous constituents indicated by the results of the analysis on the waste residuals. The liners are assumed to have radioactive contamination due to contact with the purgewater. Based on the inspection, a limited radiological survey of the liners may be conducted to identify any hot spots. The liners will then be removed and disposed of as debris at ERDF. The components of the leachate collection system are assumed to have radioactive contamination and will be disposed of at ERDF.

The structural-steel sidewalls were not in contact with the purgewater and thus are not expected to be contaminated. If inspection indicates a potential for the waste to have contacted the sidewall, a limited radiological survey and limited chemical sampling will be conducted. The sidewalls will be disassembled and either recycled or disposed of as debris elsewhere onsite.

Limited sampling of the unloading ramp will be conducted prior to its removal. It is not expected to be contaminated and thus will be disposed of as debris elsewhere onsite.

Decontamination of construction and sampling equipment will be conducted at the PSTF site and the decontamination fluids will be collected and disposed of accordingly.

3.2 CONFIRMATION SAMPLING

After the ModuTanks have been completely removed, confirmation soil sampling will be conducted to confirm there is no residual dangerous waste contamination. A Confirmation Sampling Plan will be developed prior to closure and pursuant to a data quality objectives analysis. Any soil found to contain hazardous waste constituents above cleanup levels (no soil is expected to be designated dangerous waste) may be excavated and disposed of elsewhere onsite.

3.3 SITE RESTORATION

After all removals have been completed, the site will be graded to an even surface, and sloped slightly to prevent ponding of precipitation. The fencing surrounding the site will be taken down and all postings will be removed. At this point, previously required RCRA inspections will cease.

3.4 CLOSURE CERTIFICATION

In accordance with WAC 173-303-610(6), within 60 days of completion of closure of the PSTF, the U.S. Department of Energy, Richland Operations Office (RL) will submit to the Washington State Department of Ecology a certification of closure signed by both RL and an independent registered professional engineer. The certification will specify that the PSTF has been closed in accordance with specifications contained within the approved closure plan.

4.0 CLOSURE SCHEDULE

Closure activities will begin in the third quarter of 2000 and will require approximately 6 weeks to complete.

5.0 CLOSURE COST ESTIMATE

The cost for closure by removal of the PSTF is estimated to be approximately \$196,000. This cost includes the following activities:

- Dismantling and disposing or recycling the components of the clean tank
- Sampling, treating (if found to be contaminated), and disposing of the residual solids remaining in the active tank
- Dismantling and disposing of the components of the active tank
- Verification sampling of underlying soil and excavation of soil found to be contaminated
- Removal of perimeter fence.

6.0 REFERENCES

40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," *Code of Federal Regulations*, as amended.

40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*, as amended.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601, et seq.

Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et seq., as amended.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.